

CHRONIC REGIONAL PAIN SYNDROME (CRPS)
(Also referred to as reflex sympathetic dystrophy or
causalgia)

I. Background

Complex regional pain syndrome is a descriptive term encompassing a variety of painful conditions following injury, which appear regionally and have a distal predominance of abnormal physical examination findings. This painful condition typically follows a traumatic injury or noxious event to an extremity, with a disproportionate response respective to the original insult. Medical conditions including stroke and myocardial infarction may also be precipitating factors. The pain pattern is not limited to the distribution of a single peripheral nerve, and physical findings include edema, alterations in skin blood flow, abnormal sudomotor activity in the region of pain, allodynia or hyperalgesia.

CRPS Type I (Reflex Sympathetic Dystrophy)

1. Type 1 CRPS is a syndrome that develops after an initiating noxious event.
2. Spontaneous pain or allodynia/hyperalgesia occurs, is not limited to the territory of a single peripheral nerve and is disproportionate to the inciting event.
3. There is or has been evidence of edema, skin blood flow abnormality, or abnormal sudomotor activity in the region of the pain since the inciting event.
4. The diagnosis is excluded by the existence of conditions that would otherwise account for the degree of pain and dysfunction.

CRPS Type II (Causalgia)

1. Type II CRPS is a syndrome that develops after a nerve injury. Spontaneous pain or allodynia/hyperalgesia occurs and is not necessarily limited to the territory of

the injured nerve.

2. There is or has been evidence of edema, skin blood flow abnormality, or abnormal sudomotor activity in the region of the pain since the inciting event.

3. The diagnosis is excluded by the existence of conditions that would otherwise account for the degree of pain and dysfunction.

II. Diagnostic Criteria

1. History of a noxious event or cause of immobilization.

2. Continued pain, allodynia or hyperalgesia out of proportion to the injury.

3. Physical evidence of edema, trophic skin changes, hair loss, alterations in skin blood flow or abnormal sudomotor activity in the region of pain.

4. The diagnosis is excluded by the existence of conditions that otherwise account for the degree of pain and dysfunction.

III. Diagnostic Studies

1. Surface temperature measurements indicating at least 1 degree Celsius asymmetry between the normal and injured sides. The existence of a skin temperature differential may vary, and repeated measurements are helpful. The injured side may be warmer or cooler.

2. A three-phase radionuclide bone scan may assist in diagnosis. A normal study does not exclude this diagnosis, however.

3. Radiographic studies of the injured extremity may show patchy demineralization in some cases.

IV. Treatment

Treatment for complex regional pain syndrome type 1 (reflex sympathetic dystrophy) should be directed at providing pain control in an effort to promote participation in a directed physical and/or occupational

therapy program to restore use and function of the injured extremity. Treatment options include:

- A. Pharmacologic Agents
 - Nonsteroidal anti-inflammatory drugs
 - Tricyclic antidepressants
 - Anticonvulsants
 - Oral opioids
 - Oral steroids
- B. Physical Modalities
 - Range of motion exercises (passive, active assisted, active)
 - Weight-bearing exercises
 - Edema-control garments (stocking or glove)
- C. Injection Techniques
 - Somatic and sympathetic nerve blocks
- D. Surgical Sympathectomy

Surgical sympathectomy is rarely considered effective in resolution of complex regional pain syndromes. These syndromes, including causalgia and reflex sympathetic dystrophy, are related to receptor supersensitivity, and are not caused by over-activity of the sympathetic nervous system. Most patients undergoing a surgical sympathectomy obtain only transient improvement in pain levels, and may suffer serious or disabling complications from the surgery.

The assistance of a pain management psychologist or psychiatrist may be helpful in providing motivational support, assessing and treating co-existing conditions such as depression, and may aid in the establishment of realistic treatment goals and objectives.

This condition may be appropriate for treatment in a multidisciplinary program.

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